

What is claimed is:

1. A heating device comprising:  
a support base adapted to support an article to be heated and comprising aluminum or an aluminum alloy;  
heating means provided within the support base;  
and  
a skeletal member provided within the support base and comprising a metallic material having a melting point of 850°C or higher.
2. The heating device of claim 1, wherein the skeletal members are disposed so as to be vertically symmetrical with respect to the heating means.
3. The heating device of claim 1, wherein the skeletal member is slab-shaped.
4. The heating device of claim 3, wherein a plurality of holes are formed in the skeletal member.
5. The heating device of claim 4, wherein the holes are in a honeycomb pattern.
6. The heating device of claim 1, wherein

the aluminum alloy has low contents of magnesium and copper.

7. The heating device of claim 1, wherein the skeletal member comprises one of iron, steel, nickel, a nickel alloy, titanium, a titanium alloy, copper, and a copper alloy.

8. A method for producing a heating device, comprising:

disposing heating means within a mold having a lower portion comprising a metal mold and a side portion comprising a sand mold;

pouring a melt of aluminum or an aluminum alloy into the mold; and

covering a surface of the melt with an exothermic heat insulating material,

whereby directional solidification of the melt takes place from a lower side toward an upper side to cast the melt.

9. A method for producing the heating device of claim 1, comprising:

disposing the heating means and the skeletal member within a mold having a lower portion comprising a metal mold and a side portion comprising a sand mold;

pouring a melt of aluminum or an aluminum alloy

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into th mold; and

covering a surface of the melt with an exothermic heat insulating material,

whereby directional solidification of the melt takes place from a lower side toward an upper side to cast the melt.

10. A film forming apparatus comprising:

A. the heating device of claim 1 for holding and heating an article to be heated; and

B. film material throwing means for throwing a material for a film onto the article to be heated.

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